

DEPARTMENT OF ENERGY
OFFICE OF ENVIRONMENTAL MANAGEMENT

FISCAL YEAR 2000 - 2004
FOCUS AREA NAME

MULTIYEAR PROGRAM PLAN

Month/Year

Field Focus Area Manager

Host Site Assistant Manager for EM

Headquarters Focus Area Program Manager

Focus Area Steering Committee Chairman

INTRODUCTION

Objective

The objective of the multiyear planning process is to provide a structured approach to program development and planning, which is driven by user input and facilitates user involvement, while meeting the needs of the Department of Energy (DOE) budget formulation process.

A successful multiyear planning process will result in Multiyear Program Plans (MYPPs) which:

- ensure a well-defined program that meets the users' science and technology needs;
- justify Focus Area and Crosscutting budgets and schedules for the next five years;
- integrate work into the users' schedule and budget;
- enable successful deployments;
- facilitate subsequent budget development activities; and
- achieve endorsement by Focus Area User Steering Committees.

The intended audiences for the document are the users who will concur/endorse it, and Environmental Management (EM) Headquarters, who will use it as supporting documentation for planning and budget development decisions. Once the documents are rolled up into EM and ultimately Department-wide roadmaps and plans, Congress will evaluate the connectivity to real problems and potential cost/benefits from funding decisions. For congressional purposes, MYPPs are provided as planning documents and are not considered the official budget submission.

Focus Area MYPPs should follow the current Focus Area-centered approach by showing coordination with, and connectivity to, activities from the EM Science Program, Crosscutting Programs, and future elements of the Accelerated Site Technology Deployment (ASTD) Program. However, each MYPP should not only reflect the individuality and dynamics of the particular Focus Area, but must also contain the basic elements in this guidance to ensure uniformity and comparability.

Uses

The principal use of the MYPP is as a description of the long-term plan for the Focus Area. It describes in some detail, the direction of the program for the next five years. The MYPP will identify and document: the goals of the Focus Area in terms of linkage to the end user's needs and schedules; define the proposed accomplishments in terms of problem solutions; and set the budget and performance. The MYPP is the basis for the Science and Technology Project Baseline Summaries (PBSs) and the EM Research and Development (R&D) Program Plan, and it establishes performance goals to effectively measure and manage the program. Since the MYPP forms the basis for these critical Office of Science and Technology (OST) plans, adequate documentation must be included in the MYPP in an auditable form that can support the corporate level baseline and life-cycle planning activities. Note that each Focus Area program will also be

required to submit an Annual Performance Plan (APP) at the start of the current execution year. The APP presents a more detailed explanation of the expected performance for each program. The APP supports the execution and evaluation of the program as compared to the planning and budgeting function supported by the MYPP.

Process

The process of building the MYPPs with the customer User Steering Committee is just as important as what is included in the MYPP. The MYPP document resulting from this process contains both the strategy for R&D in the problem area and a summary of the technical program being implemented to address the problem. Per the EM R&D Program Plan, the MYPP process starts with strategic planning or “roadmapping.” First, the complete Focus Area work scope (“problem area”) should be roadmapped at a high level by a team of strategic planners derived from the cleanup project manager community and the science and technology community. Next, the planning should proceed at the project level, with additional roadmapping applied as needed for complex issues. The lowest level of planning is the development of integrated technical responses for each site science and technology need. Integrated technical responses are life-cycle plans encompassing all the R&D activities necessary and sufficient to resolve a need, along with the relationship of those R&D activities to the associated cleanup project’s baseline tasks. Figure 1 illustrates the four major steps in the development and execution of EM’s science and technology investments.

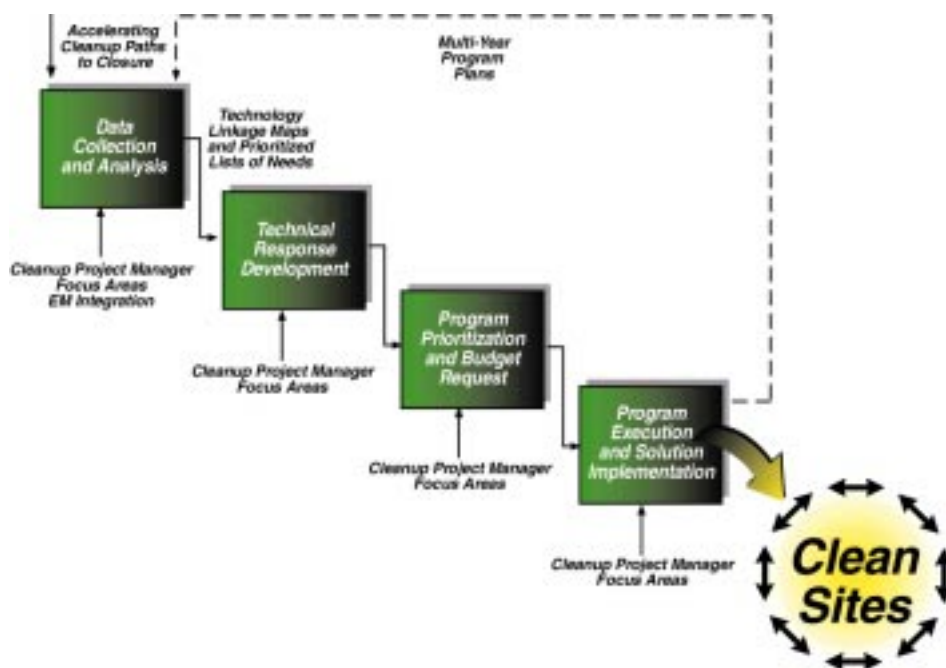


Figure 1. The four major steps of EM’s science and technology investments

The MYPPs are a complementary/integrated (not duplicative) collection of individual technical activities (responses) to documented site-identified needs. These needs are identified in user planning documents including:

- Site Technology Coordination Group (STCG) Needs;
- Critical Path Analysis;
- PBSs; and
- EM Disposition Maps.

Since all MYPPs are developed concurrently, Focus Areas need to maintain open communications during the MYPP process so appropriate interfaces are reflected in each plan. The discussions and integration with users and other OST programs will ensure a focused, well balanced, and justifiable program and will document the results of these communications.

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1. Executive Summary

The Executive Summary should be able to stand on its own without reference to the main document. It should include significant items such as who was involved in planning the Focus Area's multiyear activities; how consensus was built among the parties involved; lead laboratory integration; budget tables; the technical and programmatic strategies; and a summary of the proposed technical program. This section must be consistent with the language in the Appendix A sections of the EM R&D Program Plan. Budget descriptions must include EM Science Program, Crosscutting Programs, Industry Programs, WETO, and University Programs contributions to the Focus Area.

2. Program Background/Problem Description

This document is to be a high-level description of the problems being addressed by the Focus Areas. This section should cover three main elements:

- a) Define the overall problem(s) the Focus Areas is addressing and the size of the problem(s). This section must be consistent with the two-page sections 2.2.x in the EM R&D Program Plan. Reference Paths to Closure data (number and cost of PBSs, critical path items, waste streams, and needs), National Academy of Sciences reports, and other significant documents to provide known and accepted data to explain the significance of the problem and the need for R&D work. Relate the EM plan and total cost (spend curve) for remediation as reported in PBS's for addressing the problems. Compliance agreements, consent orders, and reports from oversight/regulatory authorities like the Defense Nuclear Facilities Safety Board, Environmental Protection Agency, Nuclear Regulatory Commission, or states should also be used.
- b) Explain why the Focus Area is the right organization to address the problem. Describe the need for the individual Focus Area and why it is the best organization to work on the problem rather than other organizations from within DOE, EM, or other agencies. Describe how the lead laboratories will be used as an integrated partner in meeting the Focus Area goals and providing technical assistance.
- c) Relate what the Focus Area has done for EM to date. Describe the major accomplishments, not as a list of technologies deployed, but in terms of problems solved and the resulting benefit to EM. In addition to site PBS information, reference deployment fact sheets and Technology Management System (TMS) information.

3. Vision and Mission

Describe how the Focus Area will approach the problems to be addressed. For example, will the Focus Area use Large-Scale Demonstration Projects (LSDPs); a research and development, demonstration, testing, and evaluation approach; or technical studies/data. The mission and vision is driven by the five elements of OST's Focus Area-centered approach to technology development: 1) integration; 2) expanding the technical assistance role (lead laboratory); 3) maintaining the highest technical capability; 4) user connection; and 5) communication of science results.

4. Goals and Strategies

Address the goals and strategies required for the Focus Area to be successful. The goals for each Focus Area should reflect the user's expectations for that Focus Area and describe enabling and replacement capabilities to be available in the near term (five years) and the long term that enhance current systems operating or planned in the cleanup mission. Include performance metrics tables in Appendix E for five years. These metrics are to be the Focus Area's best estimate as to the accomplishments for the outyears based on the information included in this plan.

Goals and strategies for the Focus Area should be developed within EM's four major thrusts for science and technology investment: 1) accelerate technology deployment; 2) reduce the cost of EM's major cost centers; 3) meet high priority needs; and 4) reduce EM's technological risk. These Focus Area goals should roll up to and support the OST Corporate Performance Measures. Note that all four strategies may not apply or apply equally in a Focus Area. Set goals for each thrust area that will enable EM to achieve success. Define a set of strategies that will enable the Focus Area to accomplish its goals. Strategies may include plans such as: user involvement in the prioritization process; focusing a percentage of available funding on near-term deployments; and ensuring that all project funding is leveraged with the end user to the maximum extent possible.

5. Relationship to Other Programs (Crosscutting Programs, EM Science Program, University Programs, Industry Programs, ASTD Programs, and others)

Based on the Focus Area-centered approach, this section should clearly describe the interactions and relationships between the Focus Areas and other significant programs of interest to deploy innovative technologies and provide critical data to users. The Focus Area should show how the EM Science Program planning is integrated into the Focus Area program and supports current work packages with critical information as well as providing a source of new technologies for future development and deployment in support of user needs. The Focus Area should also show the impacts of the EM Science Program

to the Focus Area.

Describe how the Focus Area is expanding the technical assistance role of the Crosscuts and is using the Crosscutting Program's key elements and expertise to: 1) meet commitments to users; 2) challenge poor baseline technical solutions; and 3) maintain the highest technical capabilities.

Describe connections and lines of communication with Crosscutting Programs, Industry/University Programs, Science Program, ASTD Program, STCGs, and site users as well as the User Steering Committee. Show how the Focus Area integrates the technology development and technology linkages. For instance, show co-funding possibilities, participation in each stage of technology development, or how and when technology hand-offs occur during the technology development cycle.

Describe connections externally to other agencies and programs such as within the Environmental Protection Agency, Department of Defense, or within the commercial nuclear power industry where applicable to identify synergies, leveraged funding, and that duplication of efforts is minimized.

6. Technical Program

6.1 Technical Program Summary

The primary focus is to summarize the Focus Area's planned technical program for the next five years, FY 2000 - 2004 at the product line level. The descriptions should be consistent with the style used in the Congressional budget identifying the key themes for each year and the key milestones. Capture the assumptions and recommendations for a national program that addresses all high-priority site needs as developed by the STCGs. Include how the Focus Area-centered approach is implemented in the planning from basic/applied science to deployment and technical assistance. Provide a chart showing the schedule of major site problems being addressed by the Focus Area. See Figure 2 on the next page as an example:

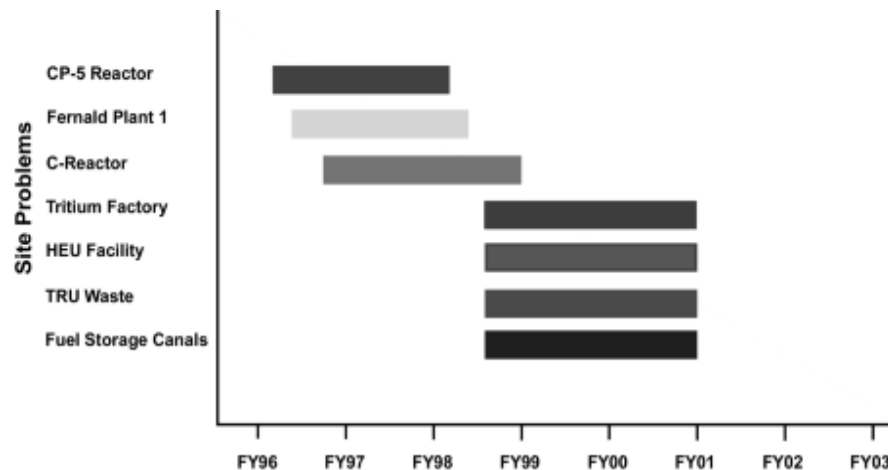


Figure 2. Schedule of Major Site Problems to be Addressed by Focus Areas

Note that OST activities must be prioritized and well integrated into user projects/programs. Key deliverables must be jointly established with the Focus Area User Steering Committees to provide needed information/technology according to the users schedule and mark the progress of the technology development activities.

Below is an example of the outline for these data tables. Describe the total technical program for each year.

TECHNICAL PROGRAM

Describe product line activities over the five-year period FY 2000 - 2004 in separate paragraphs for each year.

Product Line #1: Title...

Previous Year's Work Descriptions:

- Science and Applied Research Activities
- Technology Development Activities
- Deployment Activities

FY 2000 Proposed Work Descriptions:

- Science Program Activities

FY 2001 Proposed Work Descriptions:

FY 2002 Proposed Work Descriptions:

FY 2003 Proposed Work Descriptions:

FY 2004 Proposed Work Descriptions:

Product Line #2: Title...

etc.

6.2 Work Packages

This section should contain a description of all the active and future work packages in priority order. Work packages should describe the major site issues to be addressed, schedules, and deliverables. Work packages should be consistent from year-to-year to facilitate traceability. If the direction and content of a work package changes significantly from one year to the next, then it is better to close out the work package, and create a new work package and problem scope with the next sequential number. The amount of funding requested annually should fall within the range of \$1M to \$5M, and only under special circumstances where the schedule needs to be accelerated to meet changing user needs should this be exceeded; therefore, this is the exception rather than the rule.

Each work package should include all technical tasks required to solve logical groupings of needs including all tasks necessary to completely solve the problem addressed by the work package; problem description; proposed solution; target deployment sites; benefit; and schedule.

See the following example of work package descriptions:

6.3 Multiyear Funding Tables

TECHNICAL PROGRAM	SUCCESS INDICATORS
<u>Fuel and Weapons Component Fabrication Facilities:</u> Tritium Facilities Decommissioning at Mound This work package will provide for the demonstration and deployment of safer, more efficient and cost effective alternative deactivation and decommissioning technologies emphasizing those which address problems associated with tritium-contaminated facilities. Over the course of this project, this cost-shared (with Office of Environmental Restoration) LSDP will showcase 10 to 15 innovative technologies by demonstration at full scale during the early phase of a tritium production facility deactivation and decommissioning at Mound. Successful demonstration of remote characterization, decontamination, and dismantlement technologies will provide mortgage reduction and address human health and safety issues related to cleanup activities in highly radioactive environments.	<ul style="list-style-type: none">• 20-25 deactivation and decommissioning technologies demonstrated with validated cost and technical performance• 10 deactivation and decommissioning technologies deployed with average 25 percent cost savings• Potential \$25M mortgage reduction at Mound after broad deployment

In the product line funding tables, list the proposed OST-level work packages (which incorporate as appropriate Focus Area/Crosscut/EM Science Program/ASTD work packages) along with approved funding for FY 2000 and requested funding in millions for FY 2001 - FY 2004, in the following format:

Product Line # 1 - Title								
WP #	Work Package Name	Prior Funding	FY00	FY01	FY02	FY03	FY04	Future \$ to Complet.
WT-01	Alternative Salt Treatment for SRS	3.6	3.6	4.2	2.3	2.0	3.6	1.7
WT-02	Retrieval of Salt and Hard Heels	1.1	1.1	2.3	3.4	4.5	1.1	6.0
WT-03	Immobilize	3.9	3.9	4.1	5.3	5.9	3.9	7.8
WT-04	HTI	6.8	6.8	7.0	3.1	0	6.8	0
WT-05	Tank Integrity	4.2	4.2	4.2	3.1	0.9	4.2	0.5
Total		19.6	19.6	21.8	16.2	13.3	19.6	16.0

Product Line # 2 - Title								
WP #	Work Package Name	Prior Funding	FY00	FY01	FY02	FY03	FY04	Future \$ to Complet.
SC-01	Alternative Soil Washing	3.6	3.6	4.2	2.3	2.0	3.6	1.7
SC-02	Retrieval of Contaminants	1.1	1.1	2.3	3.4	4.5	1.1	6.0
SC-03	DNAPL	3.9	3.9	4.1	5.3	5.9	3.9	7.8
SC-04	Waste Retrieval	6.8	6.8	7.0	3.1	0	6.8	0
SC-05	Tank Integrity	4.2	4.2	4.2	3.1	0.9	4.2	0.5
Total		19.6	19.6	21.8	16.2	13.3	19.6	16.0

In the Applied Research funding table, list the proposed OST-level work packages (which incorporate EM Science Program follow-on activities) along with approved funding for FY 2000 and requested funding in millions for FY 2001 - FY 2004.

Applied Research								
WP #	Work Package Name	Prior Funding	FY00	FY01	FY02	FY03	FY04	Future \$ to Complet.
AR-SC-01	Alternative Soil Washing	3.6	3.6	4.2	2.3	2.0	3.6	1.7
AR-SC-02	Retrieval of Contaminants	1.1	1.1	2.3	3.4	4.5	1.1	6.0
AR-SC-03	DNAPL	3.9	3.9	4.1	5.3	5.9	3.9	7.8
AR-SC-04	Waste Retrieval	6.8	6.8	7.0	3.1	0	6.8	0
AR-SC-05	Tank Integrity	4.2	4.2	4.2	3.1	0.9	4.2	0.5
Total		19.6	19.6	21.8	16.2	13.3	19.6	16.0

In the Basic Science funding table, list the proposed OST-level EM Science Program grants along with approved funding for FY 2000 and requested funding in millions for FY 2001 - FY 2004.

Basic Science								
Grant #	Grant Name	Prior Funding	FY00	FY01	FY02	FY03	FY04	Future \$ to Complet.
BS-SC-01	Alternative Soil Washing	3.6	3.6	4.2	2.3	2.0	3.6	1.7
BS-SC-02	Retrieval of Contaminants	1.1	1.1	2.3	3.4	4.5	1.1	6.0
BS-SC-03	DNAPL	3.9	3.9	4.1	5.3	5.9	3.9	7.8
BS-SC-04	Waste Retrieval	6.8	6.8	7.0	3.1	0	6.8	0
BS-SC-05	Tank Integrity	4.2	4.2	4.2	3.1	0.9	4.2	0.5
Total		19.6	19.6	21.8	16.2	13.3	19.6	16.0

Funding estimates which support the FY 2000 and FY 2001 Integrated Priority Lists and MYPP work package life-cycle costs must have supporting information. Detailed backup for product line and work package estimates should be available into an auditable form, in order to support the development of the PBS.

APPENDICES

Appendix A: Focus Area Key Personnel/Organization

Include the names of the personnel that make up the key groups within the Focus Area, including the lead laboratory partner(s). Specifically include the Focus Area or lead laboratory point of contact for coordination of EM Science Program interactions. Briefly describe each group's roles and responsibilities.

Appendix B: STCG Needs/Multiyear Funding Response Table

In a single table (see below), list the needs and PBSs that are addressed by each work package and identify specific technical tasks (technologies, studies, or alternatives) requiring funding to successfully provide a solution to the user's problem in priority order based upon the Focus Area's priority process as described in Appendix C. Reference existing OST Technology ID numbers from the TMS database or indicate where new OST Technology ID numbers need to be issued. It is recommended that TMS Technology ID numbers be identified as early as possible to maintain continuity in the planning process. Each work package may combine multiple needs from multiple sites to define a national problem and then propose a technology system to fully address the problem.

Focus Area Priority	STCG Need #	Need Title	PBS #	Tech ID #	Technology Name	WP #	WP Title
1	XX-XX1	Alternative Salt...	XX-XXXX	XX	Alternative Soil Washing...	XX-XX	Alternative Soil Washing
2	XX-XX2	Retrieval of Tank...	XX-XXXX	XXX	Retrieval of Contaminants...	XX-XX	Retrieval of Contaminant
3	XX-XX3	Immobilize Waste	XX-XXXX	XXXX	DNAPL Immobilization...	XX-XX	DNAPL Immobilization
4	XX-XX4	Tank Integrity...	XX-XXXX	XXXX	Waste Retrieval...	XX-XX	Waste Retrieval

Appendix C: Prioritization Process

Describe the Focus Area's prioritization process for needs and criteria used to develop the Focus Area's response to STCG needs.

Appendix D: Major Milestones

Major milestones for each work package are to be presented for FY 2000 - FY 2004. The appendix will contain multiple tables with the schedule for each work package that highlights activities that are significant to delivering a technological solution to solve the users problem. Examples of these include: demonstrations, technical reports, treatment of real waste, acceptance by regulator, deployments, transfers to users, etc. This information should be presented as shown in the following example.

Multiyear Milestone Tables

Product Line # 1 - Title		FY00
Work Package #	Milestone Title	Planned Date
XX-01		MM/YY
etc.		MM/YY

Product Line # 2 - Title		FY00
Work Package #	Milestone Title	Planned Date
XX-01		MM/YY
etc.		MM/YY

Product Line # 3 - Title		FY00
Work Package #	Milestone Title	Planned Date
XX-01		MM/YY
etc.		MM/YY

Appendix E Expected Performance

List the Focus Area's expected multiyear performance estimates for FY 2000 - FY 2004 in the format shown below.

FY00	Deployments (# and Location)	Demonstrations	RFI	Transfer from Science
WP# 1				
Tech A				
Tech B				
Tech C				
WP# 2				
Tech A				
Tech B				
Tech C				
etc.				

FY01	Deployments (# and Location)	Demonstrations	RFI	Transfer from Science
WP# 1				
Tech A				
Tech B				
Tech C				
WP# 2				
Tech A				
Tech B				
Tech C				
etc.				

FY02	Deployments (# and Location)	Demonstrations	RFI	Transfer from Science
etc.				